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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new non-provisional applications under 37 CFR 1.53(b))

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ADDRESS TO: Assistant Commissioner for Patents
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APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. X Fee Transmittal Form
(Submit an original, and a duplicate for fee processing)
2. X Specification (Total Pages 19)
(preferred arrangement set forth below)
 - Descriptive Title of the Invention
 - Cross References to Related Applications
 - Statement Regarding Fed sponsored R & D
 - Reference to Microfiche Appendix
 - Background of the Invention
 - Brief Summary of the Invention
 - Brief Description of the Drawings (if filed)
 - Detailed Description
 - Claims
 - Abstract of the Disclosure
3. X Drawings(s) (35 USC 113) (Total Sheets 3)
4. X Oath or Declaration (Total Pages 5)
 - a. X Newly Executed (Original or Copy)
 - b. Copy from a Prior Application (37 CFR 1.63(d))
(for Continuation/Divisional with Box 17 completed) (**Note Box 5 below**)
 - i. DELETIONS OF INVENTOR(S) Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
5. Incorporation By Reference (useable if Box 4b is checked)
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.
6. Microfiche Computer Program (Appendix)
7. Nucleotide and/or Amino Acid Sequence Submission

(if applicable, all necessary)

- a. _____ Computer Readable Copy
b. _____ Paper Copy (identical to computer copy)
c. _____ Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

8. _____ Assignment Papers (cover sheet & documents(s))
9. _____ a. 37 CFR 3.73(b) Statement (where there is an assignee)
_____ X b. Power of Attorney
10. _____ English Translation Document (if applicable)
11. _____ a. Information Disclosure Statement (IDS)/PTO-1449
_____ b. Copies of IDS Citations
12. _____ Preliminary Amendment
13. X _____ Return Receipt Postcard (MPEP 503) (Should be specifically itemized)
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UNITED STATES PATENT APPLICATION

for

IMAGING SERVICE FOR AUTOMATING THE DISPLAY OF IMAGES

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IMAGING SERVICE FOR AUTOMATING THE DISPLAY OF IMAGES

RELATED APPLICATIONS

This application claims the benefit of U.S. Provisional Application No.

5 60/181,779, filed February 11, 2000.

FIELD OF THE INVENTION

This invention relates generally to imaging services, and more particularly to automating the display of a plurality of images to create a visual presentation.

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BACKGROUND OF THE INVENTION

Personal computers can execute programs that display visual presentations such as motion pictures. Devices such as scanners and digital cameras enable computer users to capture images, load them into their computers, and view them using output devices such

as monitors or printers. Furthermore, computers users can share pictures with friends over communications networks by using e-mail. As loading, manipulating, and viewing visual images on personal computers becomes easier and more popular, computer users may wish to create more sophisticated presentations of these images. For example, computer users may wish to create a visual presentation that zooms into or away from a location or that pans around a location. The visual presentation could be in the form of a motion picture, a vertical morph, or a holograph.

Personal computers can display such visual presentations, but users face significant difficulties when trying to create them. Creating the visual presentation requires accessing a number of pictures of the location, modifying them, arranging them, and combining them. Performing these steps requires a high degree of technical knowledge that most computer users do not possess. Furthermore, performing these steps is time-consuming, even for a computer user who has a high level of technical ability. Therefore, an imaging service is needed to perform the technically difficult and time-consuming tasks associated with automating the display of a plurality of images to create a visual presentation.

SUMMARY OF THE INVENTION

The invention is an imaging service that automates the display of a plurality of images to create a visual presentation. The imaging service accesses images from a client computer, from a database, or from both. It then arranges the images according to a specified characteristic and combines them in a visual presentation. In an embodiment of the invention, the computer user can specify a number of parameters for controlling the appearance of the visual presentation. In another embodiment of the invention, the imaging service modifies the images so they are consistent in appearance. In a further

embodiment, the imaging service receives compensation before sending the visual presentation to a client.

The imaging service greatly simplifies the process of creating a visual presentation that displays multiple images of a location selected by a computer user. To use the imaging service, the computer user is required to perform only basic and routine tasks on his/her computer. If the computer user can load a picture into his/her computer using a digital camera or a scanner and can use the Internet, then he/she will be able to create sophisticated visual presentations using the imaging service. Furthermore, the imaging service accelerates the process of creating visual presentations by quickly performing tasks that otherwise would be tedious and time consuming.

The present invention describes systems, clients, servers, methods, and computer-readable media of varying scope. In addition to the aspects and advantages of the present invention described in this summary, further aspects and advantages of the invention will become apparent by reference to the drawings and by reading the detailed description that follows.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a diagram illustrating a system-level overview of an embodiment of the invention;

FIG. 2 is a diagram illustrating one embodiment of an operating environment suitable for practicing the invention;

FIG. 3 is a diagram illustrating one embodiment of a computer system suitable for practicing the invention; and

FIG. 4 is a flowchart of a method to be performed by a server according to an embodiment of the invention.

DETAILED DESCRIPTION OF THE INVENTION

5 A system level overview of the operation of an embodiment of the imaging service 100 is described by reference to FIG. 1. Captured images 150 and database images 160 are combined to create a visual presentation 180. This system level overview describes an embodiment of the imaging service 100 employing a client/server system. However, other embodiments of the imaging service 100 will be readily apparent to one of skill in the art and fall within the scope of the present invention.

10 The imaging service 100 includes a client 110 and a server 120. A digital input device 150 is connected to the client 110. A computer user loads captured images 150 into the client 110 using the digital input device. In one embodiment, the digital input device 130 is a digital camera. The computer captures the captured images 150 with a digital
15 camera, which stores the captured images 150 in digital form so that they can be loaded directly into the client 110. In another embodiment, the digital input device 130 is a scanner. The computer user captures the captured images 150 with a conventional camera and uses the scanner to load the captured images 150 into the client 110. The captured images 150 are saved in an appropriate file format, such as a Joint Photographic Experts
20 Group (JPEG) file, a Graphics Interchange Format (GIF) file, or a Portable Network Graphics (PNG) file. The operation of digital cameras and scanners, as well as the various file formats for saving pictures in a computer, are well known to those of skill in the art.

The imaging service 100 also includes an image database 140. The image database 140 contains a number of database images 160 that are accessed by the server 120. The

database images 160 also are stored in an appropriate file format for pictures, such as a JPEG file, a GIF file, or a PNG file. In one embodiment of the invention, the database 140 is located in the server 120. In another embodiment, the database 140 is located on another server directly coupled to the server 120. In another embodiment, the database 140 is located in another server connected to the server 120 through a Local Area Network (LAN). In yet another embodiment, the database 140 is located in another server that is connected to the Internet. Numerous government and private organizations maintain databases containing satellite images of various locations on Earth. For example, TerraServer® maintains an extensive database containing high-resolution images of many cities throughout the United States.

Captured images 150 and database images 160 are arranged in a series of presentation images 170. The presentation images 170 are combined to create a visual presentation 180. In one embodiment, the computer user can choose among a variety of formats for the visual presentation. The computer user may choose to make the visual presentation a motion picture. The visual presentation can be a QuickTime™ movie file, a Moving Picture Experts Group (MPEG) file, or an Audio Video Interleaved (AVI) file. Numerous multimedia programs may be used to create a motion picture, and such programs are well known to those having skill in the art. Alternatively, the computer user may choose to make the visual presentation a vertical morph or a holographic image.

In one embodiment, shown in FIG. 2, the operating environment for the imaging service includes a client 110 and a server 120 connected to an Internet Service Provider (ISP) 200. Connection to the ISP 200 facilitates communication between the client 110 and the server 120 over the Internet. It is readily apparent that the present invention is not limited to Internet access and Internet web-based sites. In another embodiment, a stand-

alone computer performs the imaging service. In another embodiment, the client and the server are directly coupled. In a further embodiment, the client and the server are connected through a Local Area Network (LAN). The different operating environments in which multiple computers can communicate with each other are well known to those of skill in the art.

One embodiment of a server 120 is illustrated in FIG. 3. The server 120 includes a processor 300, memory 310, and input/output devices 320. The processor 300, memory 310, and input/output devices 320 are connected through a bus 330. The memory 310 is configured to store instructions which, when executed by the processor 300, perform the method described herein. The memory 310 may also store the captured image and database images used in the method described herein. Input/output devices 320 may include a keyboard, a mouse or other pointing device, a digital camera, a scanner, a disk drive, a monitor, and a printer.

The system level overview of the operation of an embodiment of the invention has been described in this section of the detailed description. While the invention is not limited to any particular arrangement of computer systems and components, for sake of clarity a simplified arrangement has been described.

Next, the particular methods of the invention are described in terms of computer software with reference to a flowchart illustrated in FIG. 4. The methods to be performed by the computer constitute computer programs made up of computer-executable instructions. Describing the methods by reference to a flowchart enables one skilled in the art to develop programs including instructions to carry out the methods on a suitable computer (the processor of the computer executing the instructions from computer-readable media). If written in a programming language conforming to a recognized

standard, such instructions can be executed on a variety of hardware platforms and for interface to a variety of operating systems. In addition, the present invention is not described with reference to any particular programming language. It will be appreciated that a variety of programming languages may be used to implement the teachings of the invention as described herein. Furthermore, it is common in the art to speak of software, in one form or another (e.g., program, procedure, process, application, module, logic...), as taking an action or causing a result. Such expressions are merely a shorthand way of saying that execution of the software by a computer causes the processor of the computer to perform an action or a produce a result.

Referring to FIG. 4, the acts to be performed by a server system performing the imaging service are shown. The server sends a web page for the imaging service to the client 401. The web page provides instructions to the computer user for using the imaging service and prompts the computer user to input various types of information 403. The web page instructs the computer user to specify the source of the images that are used to create the visual presentation. It enables the computer user to specify whether the visual presentation includes only captured images, only database images, or a combination captured images and database images. Additionally, the web page instructs the computer user to input location information such as a street address or location coordinates if the user wants the visual presentation to include any database images. Furthermore, the web page instructs the computer user to specify a characteristic by which the images are arranged. For example, the computer user may specify distance or magnification if he/she wants the visual presentation to zoom into or away from a location. Alternatively, the computer user may specify perspective or angle if he/she wants the visual presentation to pan around a location.

In alternate embodiments of the invention, the web page instructs the computer user to enter additional information relating to the appearance of the visual presentation. In one embodiment, the web page instructs the computer user to specify the type of visual presentation that the imaging service creates. For example, the computer user could

5 choose to view the visual presentation as a motion picture, a vertical morph, or a hologram. In another embodiment, the web page instructs the computer user to specify how quickly the visual presentation zooms in or out, or how quickly the visual presentation pans around the location. In yet another embodiment, the web page instructs the computer user to specify whether the visual presentation stops during zooming or

10 panning. In a further embodiment, the web page instructs the computer user to specify whether the images resolve or fade during the visual presentation. In an even further embodiment, the web page instructs the computer user to specify whether the visual presentation appears in black-and-white or in color.

After the computer user inputs the necessary information and follows the

15 instructions on the web page, the server receives the information from the client 405. Then, the server accesses presentation images according to the information inputted by the computer user 407. If the computer user specified that the visual presentation include only database images 409, the server accesses all of the presentation images from a database 411. Alternatively, if the computer user specified that the visual presentation include only

20 captured images, the server accesses all of the presentation images from the client. If the computer user specified that the visual presentation include both captured images and database images, the server accesses the presentation images both from a database and from the client 417.

The server arranges the presentation images according to the characteristic specified by the computer user 419. If the computer user chose distance or magnification as the characteristic, the server arranges the presentation images such that the visual presentation zooms into or away from the desired location. Alternatively, if the computer user chose perspective or angle as the characteristic, the server arranges the presentation images such that the visual presentation pans around the desired location.

In one embodiment, the imaging service can modify the presentation images to be consistent in size, color, exposure, and other attributes 421. The modification may be necessary to create a visually attractive and uniform presentation, especially if the visual presentation includes both captured images and database images. The imaging service modifies the images using image-smoothing technology to create seamless transitions between the presentation images as they are displayed in the visual presentation 423. The server combines the presentation images in a visual presentation 425. Finally, the online service then sends the visual presentation to the client 429.

In an alternate embodiment, the online service requires compensation before the server sends the visual presentation to the client. The server can request payment at various points during the process of performing the online service. The payment amount may vary depending upon the options selected by the computer user. For example, the online service may require a higher payment if the computer user wants to modify the images. Alternatively, the online service may require a higher payment if the presentation images are accessed from a database rather than being uploaded from a client. The server may wait until receiving confirmation of payment before proceeding to the next step in the process or before sending the visual presentation to the client.

The particular methods performed by a server system of an embodiment of the invention have been described. The method performed by the server has been shown by reference to a flowchart illustrated in FIG. 4, including all the acts from 401 until 429. Additionally, a method performed by a server in an alternative embodiment of the invention has been shown by reference to a flowchart illustrated in FIG. 5, including all the acts from 401 to 429.

Conclusion

A system and method for creating a visual presentation of zooming into or away from a picture has been described. Although specific embodiments have been illustrated and described herein, it will be appreciated by those of ordinary skill in the art that any arrangement which is calculated to achieve the same purpose may be substituted for the specific embodiments shown. This application is intended to cover any adaptations or variations of the present invention.

For example, those of ordinary skill within the art will appreciate that the invention can be practiced without using a client/server system. The imaging service can be performed on a stand-alone computer or on directly coupled computers. Furthermore, the client/server system is not limited to computers connected to the Internet through an ISP. The client and server can be connected to a LAN. The terminology used in this application with respect to a method for creating a zoom effect is meant to include all of these environments. Therefore, it is manifestly intended that this invention be limited only by the following claims and equivalents thereof.

CLAIMS

What is claimed is:

- 1 1. A computerized method for displaying images comprising:
2 accessing a plurality of presentation images;
3 arranging the presentation images according to at least one
4 characteristic; and
5 combining the presentation images in a visual presentation.
- 1 2. The computerized method of claim 1 further comprising:
2 selecting the characteristic from the group consisting of distance, perspective,
3 magnification, and angle.
- 1 3. The computerized method of claim 1 further comprising:
2 modifying at least one of the presentation images.
- 1 4. The computerized method of claim 1 further comprising:
2 accessing an address for a location.
- 1 5. The computerized method of claim 1 further comprising:
2 accessing location coordinates for a location.
- 1 6. The computerized method of claim 1 further comprising:
2 receiving compensation from a client.
- 1 7. The computerized method of claim 1 further comprising:
2 accessing viewing preferences, wherein the viewing preferences are selected
3 by a computer user and affect the appearance of the visual presentation.

1 8. The computerized method of claim 1 wherein accessing a plurality of
2 presentation images comprises:

3 uploading a plurality of presentation images from a client.

1 9. The computerized method of claim 1 wherein accessing a plurality of
2 presentation images comprises:

3 loading a plurality of presentation images from a database.

1 10. The computerized method of claim 1 wherein accessing a plurality of
2 presentation images comprises:

3 uploading at least one presentation image from a client; and

4 loading at least one presentation image from a database.

1 11. The computerized method of claim 1 wherein accessing a plurality of
2 presentation images comprises:

3 loading at least one presentation image from a computer-readable medium.

1 12. The computerized method of claim 1 further comprising:

2 sending the visual presentation to a client.

1 13. The computerized method of claim 1 further comprising:

2 saving the visual presentation on a computer-readable medium.

1 14. A computerized system comprising:

2 a processing unit;

3 a memory coupled to the processing unit through a system bus;

4 a computer-readable medium coupled to the processing unit through

5 the system bus; and

6 a program executed from the computer-readable medium by the
7 processing unit, wherein the program causes the processing unit to access a plurality
8 of presentation images, arrange the presentation images according to at least one
9 characteristic, and combine the presentation images in a visual presentation.

1 15. The computerized system of claim 14 wherein the program further causes the
2 processing unit to select the characteristic from the group consisting of distance,
3 perspective, magnification, and angle.

1 16. The computerized system of claim 14 wherein the program further causes the
2 processing unit to modify at least one of the presentation images.

1 17. The computerized system of claim 14 wherein the program further causes the
2 processing unit to access an address for a location.

1 18. The computerized system of claim 14 wherein the program further causes the
2 processing unit to access location coordinates for a location.

1 19. The computerized system of claim 14 wherein the program further causes the
2 processing unit to receive compensation from a client.

1 20. The computerized system of claim 14 wherein the program further causes the
2 processing unit to access viewing preferences, wherein the viewing preferences are
3 selected by the user and affect the appearance of the visual presentation.

1 21. The computerized system of claim 14 wherein the program further causes the
2 processing unit to send the visual presentation to a client.

1 22. The computerized system of claim 14 wherein the program further causes the
2 processing unit to save the visual presentation on a computer-readable medium.

1 23. A first computer-readable medium having computer-executable instructions
2 for creating a visual presentation comprising:
3 accessing a plurality of presentation images;
4 arranging the presentation images according to at least one characteristic; and
5 combining the presentation images in a visual presentation.

1 24. The first computer-readable medium of claim 23 having computer-executable
2 instructions further comprising:
3 selecting the characteristic from the group consisting of distance, perspective,
4 magnification, and angle.

1 25. The first computer-readable medium of claim 23 having computer-executable
2 instructions further comprising:
3 modifying at least one of the presentation images.

1 26. The first computer-readable medium of claim 23 having computer-executable
2 instructions further comprising:
3 accessing an address for a location.

1 27. The first computer-readable medium of claim 23 having computer-executable
2 instructions further comprising:
3 accessing location coordinates for a location.

1 28. The first computer-readable medium of claim 23 having computer-executable
2 instructions further comprising:

3 receiving compensation from a client.

1 29. The first computer-readable medium of claim 23 having computer-executable
2 instructions further comprising:

3 accessing viewing preferences, wherein the viewing preferences are selected
4 by a computer user and affect the appearance of the visual presentation.

1 30. The first computer-readable medium of claim 23 having computer-executable
2 instructions further comprising:

3 uploading a plurality of presentation images from a client.

1 31. The first computer-readable medium of claim 23 having computer-executable
2 instructions further comprising:

3 loading a plurality of presentation images from a database.

1 32. The first computer-readable medium of claim 23 having computer-executable
2 instructions further comprising:

3 uploading at least one presentation image from a client; and
4 loading at least one presentation image from a database.

1 33. The first computer-readable medium of claim 23 having computer-executable
2 instructions further comprising:

3 loading at least one presentation image from a second computer-readable
4 medium.

1 34. The first computer-readable medium of claim 23 having computer-executable
2 instructions further comprising:

3 sending the visual presentation to a client.

1 35. The first computer-readable medium of claim 23 having computer-executable
2 instructions further comprising:
3 saving the visual presentation on a second computer-readable medium.

1 36. A method for receiving compensation for use of an imaging service by a
2 computer user comprising:
3 determining an amount of compensation based upon use of the imaging
4 service by the computer user;
5 sending a request for payment of the amount of compensation to the computer
6 user; and
7 receiving the amount of compensation.

1 37. The method of claim 36 wherein use of the imaging service comprises:
2 accessing the imaging service;
3 sending information to the imaging service; and
4 downloading a visual presentation.

1 38. A computerized system comprising:
2 means for accessing a plurality of presentation images;
3 means for arranging the presentation images according to at least one
4 characteristic; and
5 means for combining the presentation images in a visual presentation.

1 39. The computerized system of claim 38 further comprising:
2 means for selecting the characteristic from the group consisting of distance,
3 perspective, magnification, and angle.

1 40. The computerized system of claim 38 further comprising:

2 means for modifying at least one of the presentation images.

1 41. The computerized system of claim 38, further comprising:

2 means for receiving compensation from a client.

080398.P366

ABSTRACT OF THE DISCLOSURE

An imaging service for automating the display of a plurality of images to create a visual presentation is disclosed. The imaging service accesses images of a location, arranges them such that they create a desired visual effect when displayed, and combines
5 them in a visual presentation. The imaging service may employ a client/server system, in which case images and information are uploaded from a client, and the visual presentation is downloaded to the client. The imaging service may also receive compensation from a computer user for using the imaging service.

100

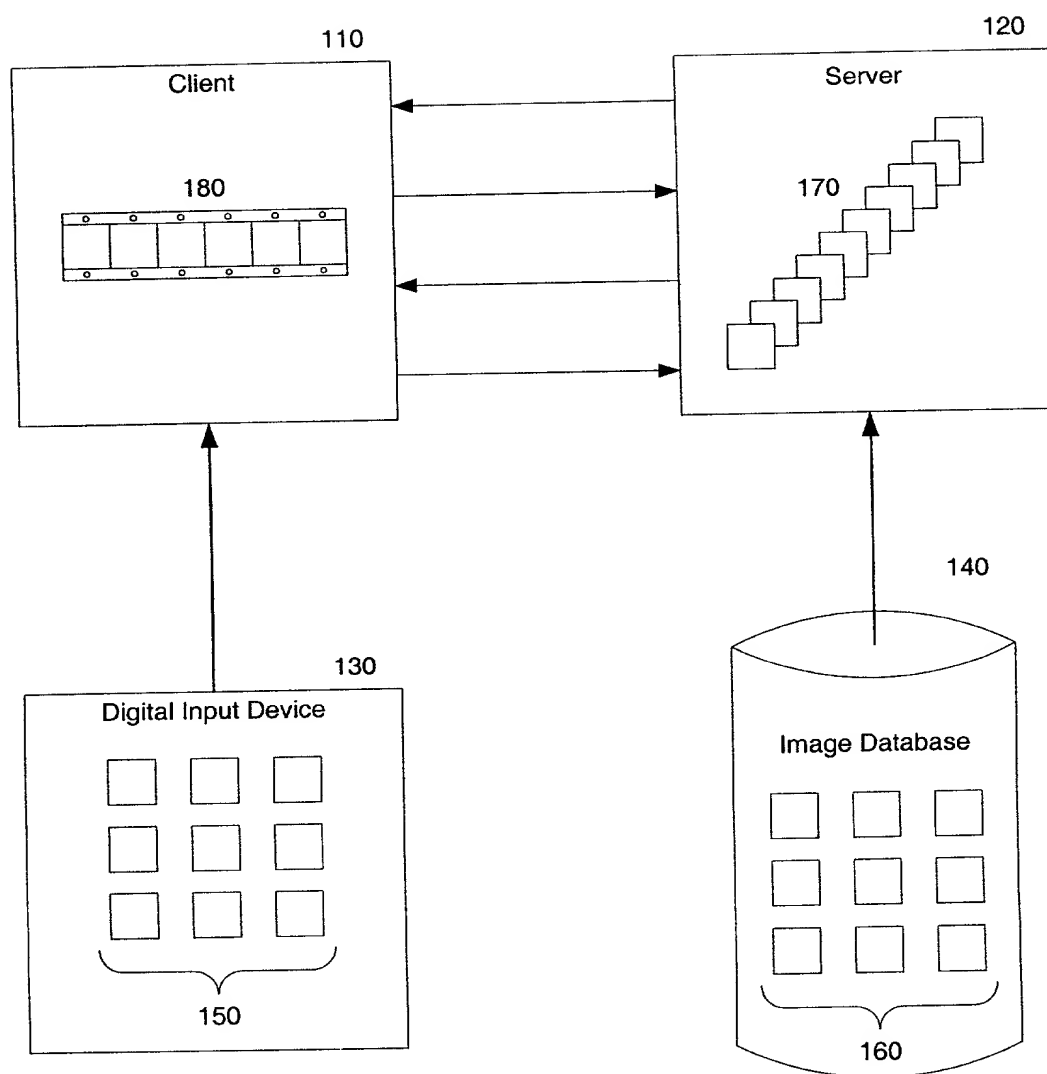


FIG. 1

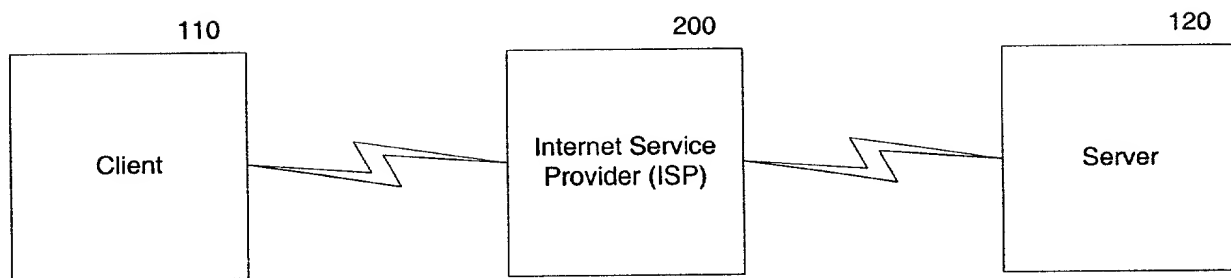


FIG. 2

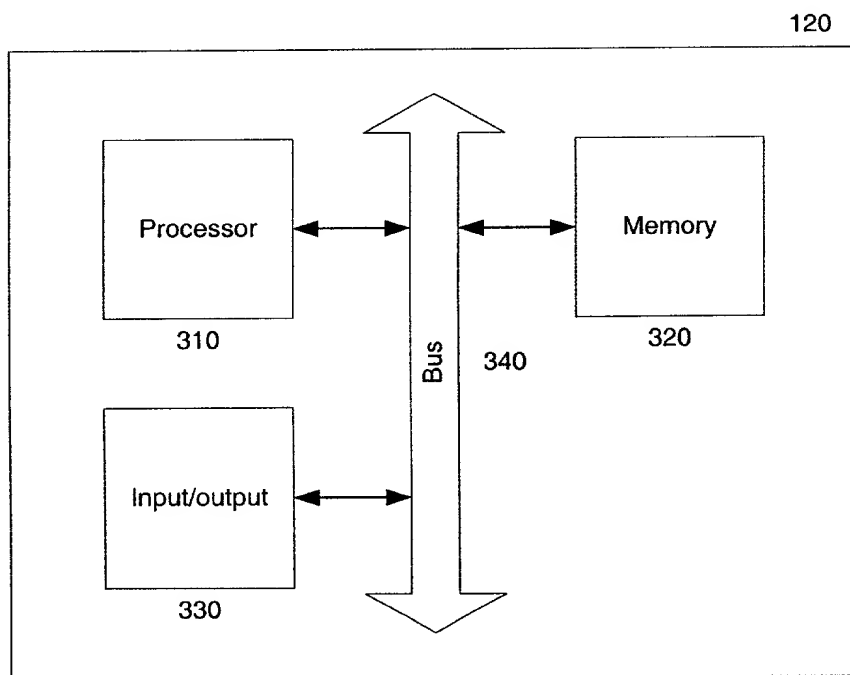


FIG. 3

400

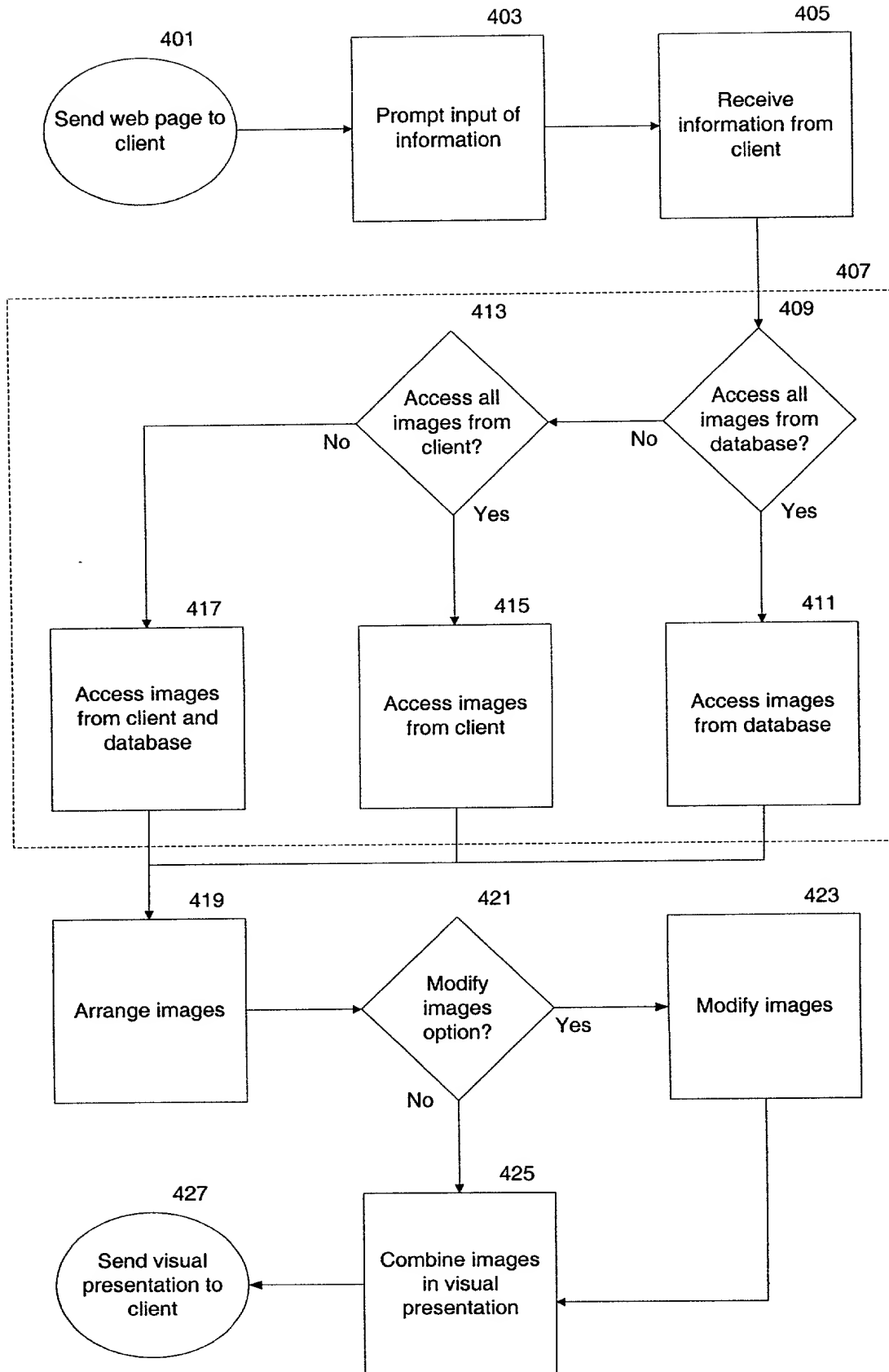


FIG. 4

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below, next to my name.

I believe I am the original, first, and sole inventor (if only one name is listed below) or an original, first, and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

IMAGING SERVICE FOR AUTOMATING THE DISPLAY OF IMAGES

the specification of which

 X is attached hereto.
 was filed on _____ as
United States Application Number _____
or PCT International Application Number _____
and was amended on _____
(if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claim(s), as amended by any amendment referred to above. I do not know and do not believe that the claimed invention was ever known or used in the United States of America before my invention thereof, or patented or described in any printed publication in any country before my invention thereof or more than one year prior to this application, that the same was not in public use or on sale in the United States of America more than one year prior to this application, and that the invention has not been patented or made the subject of an inventor's certificate issued before the date of this application in any country foreign to the United States of America on an application filed by me or my legal representatives or assigns more than twelve months (for a utility patent application) or six months (for a design patent application) prior to this application.

I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d), of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

[illegible]

(Number)	(Country)	(Day/Month/Year Filed)	Yes	No
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No

<u>60/181,779</u> (Application Number)	<u>February 11, 2000</u> Filing Date
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(Application Number)	Filing Date
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I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Number)	Filing Date	(Status -- patented, pending, abandoned)
(Application Number)	Filing Date	(Status -- patented, pending, abandoned)

I hereby appoint the persons listed on Appendix A hereto (which is incorporated by reference and a part of this document) as my respective patent attorneys and patent agents, with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith.

Send correspondence to Sheryl Sue Holloway, BLAKELY, SOKOLOFF, TAYLOR &
(Name of Attorney or Agent)
ZAFMAN LLP, 12400 Wilshire Boulevard 7th Floor, Los Angeles, California 90025 and direct
telephone calls to Sheryl Sue Holloway, (408) 720-8300.
(Name of Attorney or Agent)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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Inventor's Signature _____ Date _____

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Full Name of Third/Joint Inventor John Tree

Inventor's Signature _____ Date _____

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APPENDIX A

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APPENDIX B

Title 37, Code of Federal Regulations, Section 1.56 Duty to Disclose Information Material to Patentability

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclosure information exists with respect to each pending claim until the claim is cancelled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is cancelled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

- (1) Prior art cited in search reports of a foreign patent office in a counterpart application, and
 - (2) The closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.
- (b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made or record in the application, and
- (1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or
 - (2) It refutes, or is inconsistent with, a position the applicant takes in:
 - (i) Opposing an argument of unpatentability relied on by the Office, or
 - (ii) Asserting an argument of patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

(c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:

- (1) Each inventor named in the application;
 - (2) Each attorney or agent who prepares or prosecutes the application; and
 - (3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.
- (d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.